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Forests in a changing environment

Reversing the loss of forest cover, preventing forest degradation in all types of forests and combating desertification, including in low forest cover countries

Report of the Secretary-General

Summary

The purpose of the present report is to assess progress in reversing the loss of forest cover, preventing forest degradation and combating desertification, including in low forest cover countries, in order to enable the Forum to identify possible future actions for addressing those issues more effectively.

Despite the efforts made by countries to advance sustainable forest management and the global objectives on forests in recent years, deforestation continues at an alarming rate. Approximately 200 km^2 of forest cover was lost per day from 2000 to 2005. Over the past quarter-century, 25 per cent of land degradation is associated with broad-leaved forests and 17 per cent with boreal forests. The agricultural lands and forests that have been affected by land degradation during this period are home to approximately one billion people, or 15 per cent of the Earth's population. The alarming rate of deforestation, land degradation and desertification exacerbate chronic poverty and pose serious challenges for the countries, especially developing countries to achieve sustainable forest management, global objectives on forests and the Millennium Development Goals. In this regard, low forest cover countries are among most vulnerable countries that are particularly susceptible to land degradation leading to desertification.

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To face these challenges, it is necessary to address the technical, technological, financial and institutional needs of countries, in particular developing countries, in these fields. Further work also needs to be undertaken in the development and validation of indicators for assessing more effectively the implementation of the non-legally binding instrument, especially as regards forest degradation. In addressing more effectively deforestation, forest degradation and desertification through sustainable forest management, collaboration among the Forum and other relevant multilateral environmental agreements and other forest-related agreements should be strengthened.

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I. Introduction

1. The non-legally binding instrument on all types of forests, hereinafter referred to as the forest instrument, agreed by the United Nations Forum on Forests (UNFF) at its seventh session and adopted by the General Assembly on 17 December 2007 (resolution 62/98, annex), grew out of the concern of Member States over continued deforestation and forest degradation and other unsustainable practices and their adverse impact on the environment, economies, and the livelihoods of 1.6 billion people. In the forest instrument, Member States reaffirm their commitment to work globally, regionally and nationally to achieve progress towards the achievement by 2015 of the four global objectives on forests, the first of which aims to "Reverse the loss of forest cover worldwide through sustainable forest management, including protection, restoration, afforestation and reforestation, and increase efforts to prevent forest degradation".

2. At its seventh session, in 2007, the United Nations Forum on Forests also adopted the multi-year programme of work of the Forum for the period 2007-2015 (resolution 7/1), which calls for the eighth session in 2009 to address forests in a changing environment, including the themes "Reversing the loss of forest cover, preventing forest degradation in all types of forests and combating desertification, including in low forest cover countries"; "Forests and biodiversity conservation, including protected areas"; and "Forests and climate change". The present report provides an assessment of progress on the first of these interconnected issues, with the latter two being addressed in separate reports of the Secretary-General.[1]

3. The Forum and its predecessors, the Intergovernmental Panel on Forests (IPF) and the Intergovernmental Forum on Forests (IFF), have long considered deforestation, forest degradation and desertification among the most serious problems affecting the achievement of sustainable forest management worldwide. During its second session in 2002, the Forum reviewed the various IPF/IFF proposals for action linked to combating deforestation and forest degradation. Prior to reaching agreement on the forest instrument, the IPF/IFF/UNFF continuum adopted 10 IPF/IFF proposals for action and operative paragraphs of Forum resolutions and decisions on maintaining and expanding forest cover, 12 on enhancing the role of planted forests, 38 on analysing and addressing the underlying causes of deforestation and forest degradation, and 14 on forest health related to forest degradation.[2]

4. IPF, IFF and the Forum have also given emphasis to the special problems faced by countries with low forest cover, which can be particularly susceptible to land degradation and desertification. Low forest cover nations, most of which are developing countries, possess scarce forests and woodlands that are particularly important for their economic, social, cultural, environmental and subsistence values. Most low forest cover countries face serious challenges in ensuring adequate access to the many goods and services provided by forests. In response, IPF, IFF and the Forum have adopted 25 proposals for action and operative paragraphs of Forum resolutions and decisions on countries with low forest cover and 7 on the impact of desertification and drought on fragile ecosystems.[2]

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[1] E/CN.18/2009/4 and E/CN.18/2009/6. Proposals and recommendations on all these themes are contained in document E/CN.18/2009/8.

[2] UNFF secretariat (2007), Subject Index (unpublished), pp. 58, 59 and 61.

5. Reversing the loss of forest cover, preventing forest degradation and combating desertification are critically important for achieving the Millennium Development Goals, in particular for eradicating extreme poverty and hunger and for ensuring environmental sustainability. Forests contribute to the societal well-being of nearly one fourth of the world's population who depend on forests for their livelihoods. They also maintain vital ecosystem functions such as the conservation of biodiversity, soil conservation, water supply, water quality and flood control, among others. Reforestation and afforestation play a fundamental role in the rehabilitation of degraded ecosystems in drylands affected by land degradation and desertification.

6. This report draws from different sources, including general literature. Contributions from member organizations of the Collaborative Partnership on Forests (CPF) were important in the elaboration of this document.

II. Loss of forest cover, forest degradation and desertification

A. Loss of forest cover 1990-2005

7. According to the Global Forest Resources Assessment 2005 prepared by the Food and Agriculture Organization of the United Nations (FAO), the world's forest cover is 3,952,025,000 hectares, or approximately 30 per cent of the Earth's total land area.[3] However, forests are unevenly distributed throughout the world, with 10 countries possessing two-thirds of the total, while 64 countries that fall under the category of low forest cover countries have less than 10 per cent of their land area in forest cover.

8. Of the nearly 4 billion hectares of forests, 36 per cent is considered primary, with no clearly visible indications of human activity; 53 per cent, modified natural forests with clearly visible indications of human activity; 7 per cent, semi-natural forests, with native species established through planting, seeding and assisted regeneration; and 4 per cent, forest plantations. Generally speaking, the richest biodiversity is contained in primary forests.

9. The Global Forest Resources Assessment 2005, which provides the most up-to-date information, reveals that deforestation continues at an alarming rate. Deforestation accounted for the loss of approximately 13 million hectares per year from 2000 to 2005. During this same period, natural expansion of forests as well as the expansion of forest plantations affected 5.7 million hectares per year, resulting in an annual net loss of total forest cover estimated at 7.3 million hectares, or 200 km^2 per day. This figure represents a drop from the preceding decade (1900-2000), in which annual net loss of forest cover was estimated at 8.9 million hectares. From 1990 to 2005, the Earth lost 3 per cent of its forest cover.

10. The Global Forest Resources Assessment 2005 also reveals that the global forest loss from 2000 to 2005 occurred mostly in South America (4.3 million hectares) and Africa (4 million hectares). North and Central America together suffered a net loss of 350,000 hectares per year. A similar figure was recorded for Oceania. On the other hand, Asia, which reported an annual net loss of 800,000 hectares

[3] FAO (2005), *Global Forest Resources Assessment 2005 — Progress Towards Sustainable Forest Management*, Forestry Paper 147, Rome, 2005, pp. 15-18.

during the preceding decade, showed a gain of 1 million hectares annually from 2000 to 2005, primarily owing to large-scale afforestation reported by China. Forest cover expanded in Europe by 661,000 hectares per year from 2000 to 2005, which was lower than the annual increase of 877,000 hectares from 1990 to 2000.

11. Mangroves are particularly critical forests that were given special attention in the Global Forest Resources Assessment 2005. These tidal forests have important functions as natural sea defences, nurseries for fisheries, and habitats for biodiversity. Global climate change and the associated risks of sea-level rise and extreme weather events have further underlined the importance of mangroves as a buffer protecting coastlines in the tropics and subtropics. Despite their protective functions, mangroves worldwide have been subjected to a precipitous destruction resulting from over-harvesting for timber and fuel wood, clearing for shrimp farms, agriculture, coastal development and tourism.[4] Mangroves declined from 18.8 million hectares in 1980 to 15.2 million hectares in 2005, a drop of nearly 20 per cent.[5]

12. The Global Forest Resources Assessment 2005 identifies two processes leading to the reduction in forest cover: (a) deforestation in which forests are cleared by people and converted to other uses such as agriculture, mining or infrastructure; and (b) natural disasters affecting the regeneration capacity of a forest combined with no efforts at reforestation. Unsustainable practices and illegal logging have been major factors contributing to deforestation.

B. Forest degradation

13. Reliable figures on the extent of forest degradation are not available. The Second Expert Meeting on Harmonizing Forest-related Definitions for Use by Various Stakeholders, jointly organized by FAO and the Intergovernmental Panel on Climate Change (IPCC) in collaboration with the Center for International Forestry Research (CIFOR), the International Union of Forest Research Organizations (IUFRO) and the United Nations Environment Programme (UNEP) in Rome from 11 to 13 September 2002, agreed on a common definition of forest degradation, defining it as "the reduction of the capacity of a forest to provide goods and services".[6] However, this is not an operational definition and there exist numerous perceptions of what forest degradation entails. At the moment there do not exist in the Global Forest Resources Assessment process indicators for measuring forest degradation directly.

14. The Convention on Biological Diversity, from its perspective, defines a degraded forest as "a secondary forest that has lost, through human activities, the structure, function, species composition or productivity normally associated with a natural forest type expected on that site. Hence, a degraded forest delivers a reduced supply of goods and services from the given site and maintains only limited biological diversity, including both flora and fauna. Biological diversity of degraded

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[4] Omar Vidal and Jorge E. Illueca (2008), *Transfer of Environmentally Sound Technologies for the Sustainable Management of Mangrove Forests: An Overview*, Mexico, World Wildlife Fund.

[5] FAO (2007), *The world's mangroves 1980-2005*, FAO Forestry Paper 153, Rome, 2007, p. 9.

[6] FAO (2002), *Proceedings: Second Expert Meeting on Harmonizing Forest-related Definitions for Use by Various Stakeholders*, p. 8.

forests include many non-tree components, which may dominate in the under-canopy vegetation."

15. The Guidelines of the International Tropical Timber Organization (ITTO) for the restoration, management and rehabilitation of degraded and secondary tropical forests accept the common definition for forest degradation contained in paragraph 13 above. The ITTO definition of degraded forest is similar to the definition for degraded forest used by the Convention on Biological Diversity: "A degraded forest delivers a reduced supply of goods and services from a given site and maintains only limited biological diversity. It has lost the structure, function, species composition and/or productivity normally associated with the natural forest type expected at that site." The ITTO guidelines, in the category of degraded and secondary forests, distinguish between degraded primary forest, secondary forest and degraded forest lands. The latter is defined as "former forest land severely damaged by the excessive harvesting of wood and/or non-wood forest products, poor management, repeated fire, grazing or other disturbances or land-uses that damage soil and vegetation to a degree that inhibits or severely delays the re-establishment of forest after abandonment".[7]

16. At its seventh session in 2001, the Conference of the Parties of the United Nations Framework Convention on Climate Change, in decision 11/CP.7 on land use, land-use change and forestry, requested IPCC to develop definitions for direct human-induced degradation of forests and devegetation of other vegetation types. The Intergovernmental Panel provided five possible definitions of forest degradation, based on existing and proposed definitions. With the exception of the FAO definition, the reduction in forest carbon stocks featured in these definitions.[8]

17. In its decision 2/CP.13, the Conference of Parties to the United Nations Framework Convention on Climate Change, at its thirteenth session in 2007, requested its Subsidiary Body for Scientific and Technological Advice "to undertake a programme of work on methodological issues related to a range of policy approaches and positive incentives that aim to reduce carbon emissions from deforestation and forest degradation in developing countries". As a follow-up, a workshop on this subject was held in Tokyo in June 2008. The meeting agreed that addressing emissions from forest degradation was more difficult than addressing emissions from deforestation. It was also noted that there are different types of forest degradation and some may be easier to measure than others.[9]

18. Despite the complexity of defining forest degradation, a new global land degradation assessment being undertaken in a UNEP/FAO project funded by the Global Environment Facility (GEF), entitled Land Degradation Assessment in Drylands is providing information pertinent to assessing forest degradation in broad-leaved and boreal forests over the past quarter-century. The initial findings of the project are presented in the following section.

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[7] ITTO (2002), *ITTO Guidelines for the restoration, management and rehabilitation of degraded and secondary tropical forests*, ITTO Policy Development Series No. 13, pp. 10 and 11.

[8] IPCC (2003), *Definitions and Methodological Options to Inventory Emissions from Direct Human-induced Degradation of Forests and Devegetation of Other Vegetation Types*, IPCC National Greenhouse Gas Inventories Programme, Japan, published for IPCC by IGES.

[9] United Nations Framework Convention on Climate Change, SBSTA (2008), *Report on the workshop on methodological issues relating to reducing emissions from deforestation and forest degradation in developing countries* (FCCC/SBSTA/2008/11), p. 11.

19. In the light of the above, it appears that further work needs to be done among various organizations and agreements in ensuring compatibility and harmonization in defining forest degradation. In this regard, the recent initiative by the Collaborative Partnership on Forests to build on the work of the joint initiative on harmonizing forest-related definitions and on streamlining forest-related reporting to clarify the concept of forest degradation and thereby facilitate international monitoring assessment and reporting should be supported.

20. Apart from lack of reliable data on forest degradation and the existence of various definitions for it, there are a number of issues such as land degradation which act synergistically with forest degradation. Land degradation,[10] which often follows deforestation and forest degradation, is a massive environmental problem with catastrophic results affecting humanity today. It is most commonly associated with soil erosion, nutrient depletion, water scarcity and disturbances in biological cycles, but can also be the result of chemical contamination and salinity. According to the *Global Environment Outlook 4*, as much as one third of the world's population is being affected disproportionately by land degradation. The aforementioned Land Degradation Assessment in Drylands project is identifying those areas that have been particularly affected over the past 25 years. Based on analysis of net primary productivity or biomass production, project methodology relies heavily on satellite measurements of the normalized difference vegetation index or greenness index. It also takes into account rain-use efficiency, which is net primary productivity per unit of rainfall. The project identifies as critical areas those with a declining trend in net primary productivity and declining rain-use efficiency.[11]

21. The Land Degradation Assessment in Drylands project reveals that there was an "absolute decline in biomass production" over 12 per cent of the global land area from 1981 to 2003, with a strong negative change in an additional 1 per cent of the land area. Regarding rain-use efficiency, it also found that there was an "absolute decrease" over 29 per cent of the land area, with a strong negative change on an additional 2 per cent. The areas affected are home to approximately one billion people, or 15 per cent of the Earth's population. Areas of greatest concern that were identified include tropical Africa south of the equator, south-east Africa, South-East Asia, south China, north-central Australia, Central America and the Caribbean, south-east Brazil, the Pampas, as well as boreal forests in Alaska, Canada and eastern Siberia.[12]

22. Eighteen per cent of land degradation is associated with agricultural lands, 25 per cent with broad-leaved forests and 17 per cent with boreal forests. According to the project, these figures are consistent with forest degradation, despite the fact that forest cover for boreal forests has increased. Further validation is being undertaken on the ground through country-level case studies.[12]

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[10] See article 1, United Nations Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa.

[11] UNEP (2007), *Global Environment Outlook (GEO 4) — Environment for Development*, Valetta, Malta, p. 92.

[12] Ibid., p. 93.

C. Desertification

23. Under the United Nations Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, "'desertification' means land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors, including climatic variations and human activities". Principal activities that aim at combating desertification include: "(i) prevention and/or reduction of land degradation; (ii) rehabilitation of partly degraded land; and (iii) reclamation of desertified land".

24. Drylands are particularly vulnerable to land degradation leading to desertification. Approximately 40 per cent of the Earth's land area is covered by drylands. Although mostly associated as a problem confronting developing countries, it also poses a problem in developed countries. One third of Mediterranean Europe and 85 per cent of rangelands in the United States of America are susceptible to desertification. Nevertheless, it is a particularly serious problem facing developing countries, many of which are low forest cover countries. Two billion people live in drylands, with 90 per cent of them in developing countries.[13]

25. Indicators have been proposed for assessing desertification since the term was introduced, but the lack of consistent measurement over large areas and over time has prevented reliable assessments.[14] Under the United Nations Convention to Combat Desertification, a number of countries assisted by international organizations are in the process of developing and validating indicators for assessing desertification.

26. Although the Global Forest Resources Assessment 2005 does not provide information on trends in the extent of desertification, the *State of the World's Forests 2007* addresses it as a special issue. According to the report, "Desertification constitutes one of the world's most alarming processes of environmental degradation. It affects about two thirds of the countries of the world, more than one third of the Earth's surface (more than 4 billion hectares) and more than one billion people, with potentially devastating consequences on livelihoods and food security". It is estimated that by 2020, 135 million people will be at risk of being driven from their lands because of continuing desertification. Nearly half of them — 60 million people — will be in sub-Saharan Africa.[15]

27. Sub-Saharan Africa has the highest rate of desertification in the world. The loss in productivity of cropping land is close to 1 per cent annually. According to the World Meteorological Organization, the region has suffered a 20 per cent drop in productivity over the last 40 years. One fourth of Latin America and the Caribbean has also been affected by desertification. The report also identifies China and Spain as two countries affected by desertification. Particularly alarming is the affirmation that approximately 70 per cent of the 5.2 billion hectares of dry lands utilized for agriculture are degraded and at risk of desertification.[15]

28. The *State of the World's Forests 2007* emphasizes the fundamental role that natural vegetation can play in combating land degradation. "Afforestation and reforestation, within an appropriate landscape approach, are among the most

[13] Ibid, p. 106.
[14] Ibid, p. 107.
[15] FAO (2007), *State of the World's Forests 2007*, Rome, p. 75.

effective ways to counteract it." However, it concludes that insufficient financial resources to combat desertification is the most problematic issue facing particularly developing countries. UNEP estimates that from US$ 10 to 22 billion per year over 20 years are needed to finance an effective global effort to combat desertification.[16]

III. Low forest cover countries

29. Low forest cover countries are defined in the Global Forest Resources Assessment process as those with less than 10 per cent of their land area covered in forests. Of the 64 countries and territories with low forest cover in Global Forest Resources Assessment 2005, most are in arid zones or are small island developing States and territories. Seventeen countries that qualify as low forest cover countries have more than 1 million hectares in forest cover, with three — all in arid zones — having more than 10 million hectares of forest cover. Of the seven low forest cover countries and territories that have no forests, all but one are developed country city-states or small, dependent territories.[17]

30. Based on figures taken from tables in the Global Forest Resources Assessment 2005, low forest cover countries have a combined total land area of 2.561 billion hectares, with an estimated 89 million hectares of forest cover, or 3.5 per cent of the total, in 2005. At the time, approximately 839 million people lived in low forest cover countries, with 66 per cent in Asia.[18]

31. There are a number of countries that do not meet the Global Forest Resources Assessment definition of a low forest cover country but still have a relatively low percentage of their land covered by forests. To a great extent, the recognition by a country that it is a low forest cover country is more a political decision than a designation based on the percentage of land in forest cover. In any case, they share common issues with low forest cover countries, which they may wish to address together.

32. From a regional perspective, the largest number of low forest cover countries and territories are in Asia (24) and Africa (18). There are 22 in the rest of the world, with 10 in Europe, 4 in Oceania and 5 in Latin America and the Caribbean. Most in the latter group of 22 low forest cover countries are small island developing States. The greatest concentration of low forest cover countries is found in arid and semi-arid lands extending across a broad belt from the Atlantic coast of North and West Africa, through Western and Central Asia, to Mongolia in East Asia.[19] Based on data from the Global Forest Resources Assessment 2005, 33 low forest cover countries are found within this arid and semi-arid belt. Together they have a combined land area of 2.1 billion hectares, accounting for approximately 83 per cent of the total land area of all low forest cover countries, which have a combined forest cover of approximately 66.3 million hectares, representing 3 per cent of their land

[16] More comprehensive elaboration of means implementation is presented in the report of the Secretary-General on finance and other means of implementation for sustainable forest management (E/CN.18/2009/9).

[17] Additional information is presented in the note by the secretariat entitled "Forests in a changing environment: low forest cover countries, small island developing States and high and medium forest cover countries" (E/CN.18/2009/7).

[18] FAO (2005), *Global Forest Resources Assessment 2005*, annex tables 1 and 3.

[19] FAO (2005), *Global Forest Resources Assessment 2005*, figure 2.4, p. 17.

area. Of these 33 countries, 10 have less than 1 per cent of their land area in forest cover. There was some progress from 2000 to 2005. Out of the 64 countries and territories with less than 10 per cent forest cover, 14 suffered a loss of forest cover in this period, while 16 reported increases in forest cover with the remainder reporting no change.

33. Eight of the 38 small island developing States are classified as low forest cover countries, with some having less than 1 per cent of their land area in forests.[20] They face similar constraints in their efforts to achieve sustainable forest management. These include limited land area and high population pressure, insufficient land area for developing large-scale operations, degraded lands with poor soils, vulnerability to natural disasters and climate change, high species endemism and high risk of biodiversity loss owing to small populations, invasive species, small tracts of forest within larger areas existing in geographic isolation and consequently more expensive to manage, weak institutional capacity, insecure land tenure and absentee landowners, and lack of integrated land-use planning.[21]

34. Since the inception of the Tehran Process at the International Expert Meeting on Special Needs and Requirements of Developing Countries with Low Forest Cover and Unique Types of Forest in 1999, combating desertification has been a primary focus of this initiative and participating low forest cover countries. Moreover, the Tehran Process recognized that planted forests, trees outside forests, urban and peri-urban forests and agroforestry provide important benefits to low forest cover countries such as enhanced environmental conditions, including rehabilitation of degraded lands, improved biodiversity conservation and protection of soil and water; improvement and diversification of revenues for fighting poverty and food insecurity through the production and use of wood and non-wood forest products; sustainable supply of forest products for subsistence and industry; and improvement of the quality of life.[22]

35. The Global Forest Resources Assessment 2005 contains national information for individual low forest cover countries; those countries are not grouped together in the assessment and analysis of data, information and trends, instead being grouped under their respective geographic regions. Consequently, the data and information available ma.' : it difficult to assess trends concerning changes in the extent of forest cover in low forest cover countries as a whole.

36. There has been some progress in expanding forest cover in low forest cover countries, albeit very small. The expansion of forest plantations is one of the more relevant indicators in measuring progress towards expanding forest cover in low forest cover countries and for measuring progress in combating desertification by those countries in arid and semi-arid areas. For all 64 countries and territories, national reports indicate mixed results in combating deforestation and promoting reforestation, afforestation and natural regeneration in low forest cover countries from 2000 to 2005.

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[20] FAO (2005), *Global Forest Resources Assessment 2005*, annex table 3 and http://www.un.org/special-rep/ohrlls/sid/list.htm.

[21] Ibid., pp. 8 and 9.

[22] FAO (2004), The Role of Planted Forests and Trees Outside Forests in Landscape Restoration in Low Forest Cover Countries, Planted Forests and Trees, Working Paper 34E, FAO, Rome (unpublished), pp. 4-9.

37. Of the 57 low forest cover countries that reported the existence of forests in 2000, 21 reported an increase in forest cover; 20, no change; 14, a loss in forest cover; and 2 that did not provide information. Of those reporting loss in forest cover, most are in Africa (7) and Asia (5). From 2000 to 2005, forest plantations in low forest cover countries grew by approximately 500,000 hectares and account for nearly 10 per cent of total forest cover.[23] Most of the increase was concentrated in three countries in North Africa and six other countries, including Uruguay and South Africa.

38. According to the *State of the World's Forests 2007*, insufficient financial resources is the most problematic issue facing low forest cover countries, particularly since most are developing countries and many are least developed countries.

IV. Underlying causes of deforestation and forest degradation

39. Addressing the underlying causes of deforestation and forest degradation has featured prominently in the deliberations of IPF, IFF and the Forum. Rather than focusing on the more obvious, proximate causes or symptoms of deforestation, such as, for example, unsustainable logging, the conversion of forests into agricultural land, forest fires, mining, infrastructure and the expansion of human settlements, emphasis has been placed on the underlying or root causes that are more complex in nature. Such an approach recognizes that many factors causing deforestation and forest degradation are interlinked, with many of them being synergistic. Most of these factors are outside the forest sector and are mainly political and socio-economic in nature. The number of these factors and the way that they come together can differ greatly from one country to another.

40. The country-led initiative in support of IFF on the Underlying Causes of Deforestation and Forest Degradation, held in San José, Costa Rica in 1999, identified the most important underlying causes. Although there has been progress in addressing these causes since then, they are still applicable in many areas of the world. Inappropriate and conflicting policies related to natural resource management that clash with policies and practices aimed at sustainable forest management were identified as a major underlying cause of forest loss. Other underlying causes include:[24]

(a) Lack of institutional capacity to adequately manage forests;

(b) Inadequate enforcement of existing laws;

(c) Perverse policy instruments, such as certain subsidies;

(d) Issues of governance such as corruption and human rights abuses;

(e) The lack of recognition of the multiple values of forests, leading to other forms of land use such as agriculture, cattle raising, mining and hydropower;

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[23] Based on table 10, annex 3: Global tables, FAO (2005), *Global Forest Resources Assessment 2005*.

[24] Hans J. H. Verolme and Juliette Moussa (1999), *Addressing the Underlying Causes of Deforestation and Forest Degradation — Case Studies, Analysis and Policy Recommendations*, Biodiversity Action Network, Washington, D.C., pp. 3-17.

(f) Decisions outside the forest sector promoting large-scale development projects resulting in deforestation;

(g) The lack of empowerment of local communities in forest management decisions.

41. In its resolution 2/2A[25] on the underlying causes of deforestation and forest degradation, the Forum at its second session in 2002 highlighted lessons learned in addressing several of the underlying causes identified in the San José country-led initiative. These included the usefulness of cross-sectoral policy cooperation, including the agricultural sector, to avoid inappropriate and conflicting policies; integrating rural development and livelihood programmes with national forest programmes, consistent with national development plans; the strengthening of institutional capacity for sustainable forest management; the contributions of national, regional and international initiatives to strengthen forest law enforcement; and the importance of broader participation at all levels, including local communities. In order to continue to address more effectively the underlying causes of deforestation and forest degradation, the Forum, in the operative paragraphs of the resolution, emphasized the further strengthening of capacity-building, including technology transfer, by the Collaborative Partnership on Forests and countries; urged Governments to address domestic forest law enforcement and illegal international trade in forest products; and invited countries and member organizations of CPF to review and report on the state of knowledge on subsidies that might result in deforestation and forest degradation. The cross-cutting issue of forest law enforcement and governance will feature prominently in the discussions of the themes of the sessions of the Forum agreed to under the multi-year programme of work 2007-2015.

42. One of the most important lessons learned from IPF and IFF[25] and from the review of the effectiveness of the international arrangement on forests was that a coordinated cross-sectoral approach was needed to effectively address deforestation and forest degradation.[26] This is reflected in paragraph 6 (k) of the forest instrument, where Member States commit to "Identify and implement measures to enhance cooperation and cross-sectoral policy and programme coordination among sectors affecting and affected by forest policies and management, with a view to integrating the forest sector into national decision-making processes, and promoting sustainable forest management, including inter alia addressing the underlying causes of deforestation, forest degradation and promoting forest conservation".

43. More recently, conflicts within countries have emerged as an underlying cause of deforestation and forest degradation. This is an issue that has yet to be addressed by the Forum. Forested regions in countries with a high proportion of people living in poverty are often politically marginalized, remote and inaccessible and provide combatants with refuge and food. During the past 20 years, there have been armed conflicts in forested areas in 29 countries, mostly in Africa and Asia, but also in Latin America. In addition, valuable timber can provide insurgents with funds, though this has been documented only in three cases, but there may be more. More frequently, armed groups or their supporters cultivate illicit crops in inaccessible

[25] See *Official Records of the Economic and Social Council, 2002, Supplement No. 22* (E/2002/42), chap. II, sect. B, resolution 2/2.

[26] UNFF (2005), Report of the Secretary-General: Review of the effectiveness of the international arrangement on forests, pp. 5, 18 and 19.

forested areas in South-East and Central Asia and in South America, resulting in deforestation. Many Governments, particularly in Central Africa and South-East Asia, use timber revenues to finance their armed forces. Armies utilize fire or defoliants to clear forests in order to spot insurgents more easily, while their soldiers often hunt wildlife for food. Roads built by the military to improve access into forested areas where armed conflict exists are often taken advantage of by loggers and farmers to exploit natural resources within those areas. The strengthening of military authority has led to a breakdown of governance and domestic forest law enforcement in some countries, leading to increased deforestation and forest degradation. Armed conflicts can also drain public sector funds that could be invested in sustainable forest management activities.[27]

44. Deforestation and forest degradation continue during post-conflict periods, often for different reasons. Governments are often preoccupied by pressing, short-term concerns at the expense of longer-term issues such as the sustainable management of forest resources. Short-term unsustainable logging is frequently a more immediate source for financing recuperation and reconstruction. Governance is weak and consequently logging activities are poorly regulated. Post-conflict governments in some countries have used public forested areas to relocate former soldiers from down-sized armed forces, as well as displaced people. With employment opportunities limited, former combatants turn to logging, both legal and illegal.[27]

V. Reversing the loss of forest cover, preventing forest degradation and combating desertification

A. Strengthening the implementation of the forest instrument

45. The non-legally binding instrument on all types of forests is the culmination of 15 years of complex and difficult negotiations dating back to the United Nations Conference on Environment and Development, held in Rio de Janeiro in 1992. It represents a global consensus of all countries that needs to be built upon and a new opportunity for all countries to move together in a concerted effort to achieve sustainable forest management, including reversing the loss of forest cover, preventing forest degradation and combating desertification, through its agreed-upon policies and measures.

46. The forest instrument provides the first comprehensive global framework for achieving sustainable forest management, with four clearly expressed global objectives on forests. Expectations are high that it will serve as both a framework and a platform for integrating sustainable forest management into national development plans and strategies, including national poverty reduction strategies. To this end, countries and international organizations need to give priority to the operationalization and implementation of the forest instrument and to continued collaboration with the Forum.

47. Furthermore, the successful integration of the policies and measures of the forest instrument into national development strategies will contribute to the

[27] FAO (2006), *State of the World's Forests 2005*, pp. 117-120.

achievement of the Millennium Development Goals, in particular on eradicating extreme poverty and hunger and on ensuring environmental sustainability.

48. At the same time, available financial resources, especially for developing countries, are inadequate for reversing loss of forest cover, preventing forest degradation and combating desertification. This issue has featured prominently in deliberations throughout the IPF/IFF/UNFF continuum.

49. Recent analyses made it very clear that there are several topical and geographic gaps in the current system of international forest finance, acting as serious obstacles in addressing the issue of deforestation and forest degradation. The eighth session of the Forum will consider a voluntary financial mechanism/portfolio approach/forest financing framework for financing sustainable forest management through the implementation of the forest instrument

B. Strengthening collaboration among the United Nations Forum on Forests, multilateral environmental agreements and other forest-related agreements for the implementation of the forest instrument[28]

50. In the negotiations leading up to the adoption of the non-legally binding instrument on all types of forests, it was acknowledged that there existed a considerable number of instruments directly and indirectly affecting aspects of forests. It was also acknowledged that globally forests were being addressed in a fragmented and uncoordinated manner, and that greater cooperation among those instruments was desirable in order to progress more effectively towards the achievement of sustainable forest management. A background paper prepared by the secretariat of the Forum in collaboration with UNEP in 2004 found that there were 40 forest-related legally binding instruments covering a wide range of different issues, as well as an additional 10 non-legally binding instruments and processes. Of the 40 legally binding instruments, 19 are global and 21 are regional agreements.[29]

51. In adopting the forest instrument, the General Assembly, through resolution 62/98, invited members of the governing bodies of the member organizations of the Collaborative Partnership on Forests, which includes, among others, the secretariats of UNCCD, CBD, the United Nations Framework Convention on Climate Change and the International Tropical Timber Organization (ITTO) as secretariat of the International Tropical Timber Agreement, "to support the implementation of the non-legally binding instrument on all types of forests, consistent with the mandates of those organizations, and, to that end, invites the United Nations Forum on Forests to provide guidance to the Partnership". As part of its purpose, the forest instrument seeks "to provide a framework for national action and international cooperation".

52. As the first comprehensive global agreement for achieving sustainable forest management, the forest instrument presents Member States with an opportunity and challenge for enhancing cooperation among the different international agreements

[28] Cooperation with other members of the Collaborative Partnership on Forests and international organizations and processes is covered in document E/CN.18/2009/10.

[29] UNFF secretariat (2004), *Recent Developments in Existing Forest-Related Instruments, Agreements and Processes*, Background Document No. 2, p. 5 and annex I.

relevant to forests both at the global and regional levels. Cooperation with multilateral environmental agreements is particularly needed in addressing in a more comprehensive and coherent manner the loss of forest cover, forest degradation and the land degradation-desertification continuum. Obviously opportunities should be taken to collaborate on addressing these issues with the Convention on Biological Diversity, the United Nations Framework Convention on Climate Change, the United Nations Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, and ITTO, but other partnerships should also be explored. The five biodiversity-related conventions — the Convention on Biological Diversity, the Convention on International Trade in Endangered Species of Wild Fauna and Flora, the Convention concerning the Protection of the World Cultural and Natural Heritage, the Ramsar Convention on Wetlands, and the Convention on the Conservation of Migratory Species of Wild Animals, which have a long history of close collaboration, would all be valuable allies.

53. In 2002 the Conference of the Parties to the Convention on Biological Diversity, at its sixth meeting, adopted the expanded programme of work on forest biological diversity. By decision VI/22 the Conference recognized the complementary roles of the Convention and the Forum and called for effective collaboration among the Convention, the Forum and their partners on several issues, including promoting compatibility and complementarity between national biodiversity strategies and action plans and national forest programmes. More recently, in decision IX/5, the Conference of the Parties urged Parties to "Increase cross-sectoral cooperation and initiatives at all levels, to help carry out a coordinated implementation of both the programme of work on forest biodiversity under the Convention on Biological Diversity, and the decisions set by the United Nations Forum on Forests, including the non-legally binding instrument on all types of forests, for the achievement of the 2010 target and the four global objectives on forests, with the involvement of indigenous and local communities and other relevant stakeholders, including the private sector". For more details on follow-up, see the report of the Secretary-General on forests and biodiversity conservation, including protected areas (E/CN.18/2009/6).

54. The interlinkages of deforestation, land degradation and desertification require enhanced collaboration and coordination between the Forum and the United Nations Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa. Such coordination is beneficial particularly for low forest cover countries in regard to the elaboration and implementation of National Action Programmes and National Forest Programmes under the Convention. The 10-year Strategic Plan and Framework to Enhance the Implementation of the Convention (2008-2018), adopted in 2008 at the eighth session of the Conference of the Parties in Madrid, provides an opportunity for this kind of collaboration. Sustainable forest management practices can contribute to the achievement of the objectives of the Strategy, particularly the second objective, which aims to improve the condition of affected ecosystems. Through the Strategy, the Parties to the Convention have requested their secretariat to establish and strengthen partnerships with and between relevant organizations and agencies, governments and the private sector.

55. Forests will feature more prominently in the work of the United Nations Framework Convention on Climate Change. The forest instrument recognizes the

impact of climate change on forests and sustainable forest management, as well as the important contributions that forests can play in addressing climate change. The Parties to the Convention are in the process of considering policy approaches and positive incentives on issues related to reducing emissions from deforestation and forest degradation in developing countries, as well as the role of conservation, sustainable management of forests and enhancement of carbon stocks in developing countries. This issue is addressed in greater detail in the report of the Secretary-General on forests and climate change (E/CN.18/2009/4), which proposes possible areas of collaboration between the Forum and the United Nations Framework Convention on Climate Change.

56. The forest instrument contains four specific measures addressing international trade in illegally harvested forest products. In addressing this issue, collaborative activities could be initiated between the Forum and the Convention on International Trade in Endangered Species of Wild Fauna and Flora, which has extensive expertise in the field of international trade in endangered species of flora, including timber and other forest products. Future collaboration could be carried out as an expansion of resolution 14 adopted by the Conference of the Parties on cooperation between the Convention and ITTO regarding trade in tropical timber. For additional information, please refer to the Secretary-General's report on forest biodiversity and conservation, including protected areas (E/CN.18/2009/6).

57. More concerted efforts need to be undertaken on the protection and sustainable management of mangrove forests. The Country-led Initiative on the Transfer of Environmentally Sound Technologies for the Sustainable Management of Mangrove Ecosystems in Latin America and the Wider Caribbean, held in Managua in March 2003, provided promise for closer collaboration on this subject among the Forum, ITTO, the Ramsar Convention, FAO, UNEP and the Antigua Guatemala Convention for the North-East Pacific and the Cartagena Convention for the Wider Caribbean. Further collaboration on this issue and follow-up to the recommendations of the Managua meeting could be explored. The Convention on Biological Diversity, the World Heritage Convention and other relevant bodies could also play an active role in such an initiative.

58. These are but a few examples of opportunities for closer collaboration between the Forum and multilateral environmental agreements for the implementation of the forest instrument. A more systematic policy discussion is required to ensure that such collaboration takes place in areas of common concern and where complementarity exists. Owing to the comprehensiveness of coverage on forests, the forest instrument should serve as a platform for promoting collaboration on forest issues among all forest-related agreements.

C. Assessing progress

59. As indicated earlier, much work needs to be done for developing and validating indicators for assessing forest degradation and efforts to combat desertification, such as reforestation and the establishment of planted forests. Such indicators are critical for better monitoring and assessing progress towards achieving sustainable forest management.

60. Following the adoption of the forest instrument, the secretariat of the Forum undertook an analysis of indicators in the Global Forest Resources Assessment and

three existing criteria and indicators processes that were relevant to assessing progress in the achievement of the four global objectives on forests, as well as thematic areas of the forest instrument.[30] The Global Forest Resources Assessment 2005 and two major criteria and indicators processes — the Ministerial Conference for Protection of Forests in Europe and the Montreal Process — did not have indicators for assessing progress on the forest degradation element of global objective 1.

61. ITTO, the third criteria and indicators process, introduced in 2005, under indicator 2.6 on forest condition of criterion 2 on the extent and condition of forests, three relevant sub-indicators: area of degraded primary forest, area of secondary forest and area of degraded forest lands, utilizing the definitions that appear above in paragraph 15.[31] However, the *Status of Tropical Forest Management 2005* was the most recent completed by ITTO and preceded reporting on those three sub-indicators. It will be updated in 2010 and should include for the first time information on forest degradation. Currently ITTO is working with FAO on future assessments, which will include coordination with the Global Forest Resources Assessment 2010. Nevertheless, for the moment, as in the case of the Global Forest Resources Assessment, the Ministerial Conference for Protection of Forests in Europe and the Montreal Process, the ITTO criteria and indicators process has not yet generated information on the status of forest degradation.

62. In planning the next Global Forest Resources Assessment, the Committee on Forestry, at its eighteenth session in March 2007, "requested that FRA 2010 take into full account the global objectives on forests" contained in the forest instrument.[32] A number of additional quantitative indicators were subsequently identified, including indicators related to forest degradation. However, given the complexity of developing and validating such indicators, FAO has invited members of the Collaborative Partnership on Forests to participate in a joint initiative on defining, assessing and reporting on forest degradation. It aims specifically to help strengthen the capacity of countries to assess and monitor forest degradation by identifying specific parameters and/or proxy indicators of forest degradation and degraded forests and best practices for assessing these.

63. For the purpose of the present report, attention should be drawn to the concept for reducing emissions from deforestation and forest degradation that is currently being negotiated under the United Nations Framework Convention on Climate Change. As indicated earlier, assessing forest degradation is currently difficult owing to the lack of credible indicators. Further negotiations will be needed before the structure of reducing emissions from deforestation and forest degradation finally takes form. Determining the market value of such credits versus the opportunity costs of other land uses and forest management systems will be complicated.[33]

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[30] UNTF secretariat (2007), Subject Index, table 3.

[31] ITTO (2005), *Revised ITTO criteria and indicators for the sustainable management of tropical forests including reporting format*, ITTO Policy Development Series No. 15, Yokohama, Japan, p. 19.

[32] FAO (2007), Global Forest Resources Assessment 2010: Specification of National Reporting Tables for FRA 2010, Working Paper 135, FAO, Rome (unpublished), p. 7.

[33] Ben Vickers (2008), "REDD: a steep learning curve", in *Financing Sustainable Forest Management*, ETFRN, Issue No. 49, September, p. 137.

64. The opportunity costs for reducing deforestation and forest degradation for reducing emissions from deforestation and forest degradation have been estimated at $12.2 billion per year, which would be a substantial financial contribution to preventing deforestation and forest degradation, particularly for developing countries.[34]

65. For a richer analysis, please refer to the note by the secretariat entitled "Financing for sustainable forest management: mobilizing financial resources to support the implementation of the non-legally binding instrument on all types of forests and to promote sustainable forest management", which was presented to the Open-ended Ad Hoc Expert Group to Develop Proposals for the Development of a Voluntary Global Financial Mechanism/Portfolio Approach/Forest Financing Framework in November 2008 (see E/CN.18/2008/2).

VI. Conclusions

66. Deforestation, forest degradation and desertification continue at an alarming pace, affecting the lives of over one billion people, principally in developing countries. Deforestation accounted for the loss of approximately 13 million hectares annually from 2000 to 2005.

67. The annual global net loss of total forest cover, estimated at 7.3 million hectares from 2000 to 2005, nevertheless represents a drop from the preceding decade (1900-2000), in which annual net loss of forest cover was estimated at 8.9 million hectares. From 1990 to 2005, 3 per cent of the Earth's forest cover was lost.

68. From 2000 to 2005, deforestation occurred mostly in South America and Africa. North and Central America, as well as Oceania, also suffered deforestation, but to a lesser degree. Gains in forest cover were reported for Europe, as well as for Asia, largely owing to forest expansion in China. According to the ongoing Land Degradation Assessment in Drylands project, during the past quarter-century 25 per cent of land degradation is associated with broad-leaved forests and 17 per cent with boreal forests, while 18 per cent is associated with agricultural lands.

69. While there has been some progress in the past 10 years, the underlying causes of deforestation and forest degradation have not been effectively addressed in many parts of the world.

70. The impact of armed conflict on forests has emerged in recent years as an underlying cause of deforestation and forest degradation in a number of developing countries.

71. Low forest cover countries had mixed results in combating deforestation and promoting reforestation, afforestation and natural regeneration from 2000 to 2005. Of those reporting a loss in forest cover, most are in Africa and Asia. The expansion of planted forests was an important action taken by several low forest cover countries that increased their forest cover.

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[34] UNFCCC (2007), *Investment and Financial Flows to Address Climate Change*, Bonn, table IV-35, p. 81.

72. The rates for forest degradation, land degradation and desertification are difficult to measure owing to the lack of reliable quantifiable indicators. Lack of indicators hinders effective assessment of key elements of the first global objective on forests, as well as relevant thematic clusters of the forest instrument.

73. Drylands are particularly vulnerable to land degradation leading to desertification. It is an extremely serious problem facing developing countries. Two billion people live in drylands, with 90 per cent of them in developing countries. It is estimated that approximately 70 per cent of the 5.2 billion hectares of dry lands used for agriculture are degraded and at risk of desertification. By 2020, 135 million people will be at risk of being driven from their lands because of continuing desertification, with nearly half of them — 60 million people — in sub-Saharan Africa.

74. The expansion of natural vegetation plays a fundamental role in combating land degradation and desertification. Within an appropriate landscape approach, afforestation, reforestation and the establishment of planted forests are among the most effective ways to counteract land degradation and desertification, as has been the case in several low forest cover countries, for example.

75. Financial resources and transfer of environmentally sound technologies for sustainable forest management are seriously inadequate for developing countries to successfully implement the forest instrument and effectively reverse the loss of forest cover, prevent forest degradation and combat desertification.

76. Before the adoption of the forest instrument, there were 40 forest-related legally binding and 10 non-legally binding instruments and processes covering a wide range of different issues. On a global level, forests are being addressed in a fragmented and uncoordinated manner, which can be perceived as an obstacle towards the achievement of sustainable forest management.

77. The forest instrument is the first comprehensive global agreement on sustainable forest management and has as its purpose to increase cooperation in addressing forest issues at the national and international levels. In this context, this instrument provides a sound framework for enhancing cooperation among all forest-related agreements and bodies.